```
UUU           UUU  EEEEEEEEEEEEEEE  TTTTTTTTTTTTTTT  PPPPPPPPPPPP       SSSSSSSSSSSS  YYY              YYY
UUU           UUU  EEEEEEEEEEEEEEE  TTTTTTTTTTTTTTT  PPPPPPPPPPPP       SSSSSSSSSSSS  YYY              YYY
UUU           UUU  EEEEEEEEEEEEEEE  TTTTTTTTTTTTTTT  PPPPPPPPPPPP       SSSSSSSSSSSS  YYY              YYY
UUU           UUU  EEE                     TTT       PPP        PPP  SSS              YYY              YYY
UUU           UUU  EEE                     TTT       PPP        PPP  SSS              YYY              YYY
UUU           UUU  EEE                     TTT       PPP        PPP  SSS              YYY              YYY
UUU           UUU  EEE                     TTT       PPP        PPP  SSS                 YYY        YYY
UUU           UUU  EEE                     TTT       PPP        PPP  SSS                 YYY        YYY
UUU           UUU  EEEEEEEEEEE             TTT       PPPPPPPPPPPP        SSSSSSSSS           YYY
UUU           UUU  EEEEEEEEEEE             TTT       PPPPPPPPPPPP        SSSSSSSSS           YYY
UUU           UUU  EEEEEEEEEEE             TTT       PPPPPPPPPPPP        SSSSSSSSS           YYY
UUU           UUU  EEE                     TTT       PPP                         SSS         YYY
UUU           UUU  EEE                     TTT       PPP                         SSS         YYY
UUU           UUU  EEE                     TTT       PPP                         SSS         YYY
UUU           UUU  EEE                     TTT       PPP                         SSS         YYY
UUU           UUU  EEE                     TTT       PPP                         SSS         YYY
UUUUUUUUUUUUUUUUU  EEEEEEEEEEEEEEE         TTT       PPP             SSSSSSSSSSSS            YYY
UUUUUUUUUUUUUUUUU  EEEEEEEEEEEEEEE         TTT       PPP             SSSSSSSSSSSS            YYY
UUUUUUUUUUUUUUUUU  EEEEEEEEEEEEEEE         TTT       PPP             SSSSSSSSSSSS            YYY
```

FILEID**SATSSS56

```
SATSSS56.:
    ....
    ....
    ....
LIS
```

SATSSS56
V04-000

G 6
SATS SYSTEM SERVICE TESTS WAITS (SUCC S 16-SEP-1984 00:58:38   VAX/VMS Macro V04-00   Page 1
                                       5-SEP-1984 04:32:34   [UETPSY.SRC]SATSSS56.MAR;1   (1)

```
0000      1          .TITLE  SATSSS56 SATS SYSTEM SERVICE TESTS  WAITS (SUCC S.C.)
0000      2          .IDENT  'V04-000'
0000      3
0000      4  ;
0000      5  ;********************************************************************
0000      6  ;*                                                                  *
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0000     24  ;*                                                                  *
0000     25  ;*                                                                  *
0000     26  ;********************************************************************
0000     27  ;
0000     28
0000     29  ;++
0000     30  ; FACILITY:     SYSTST (SATS SYSTEM SERVICE TESTS)
0000     31  ;
0000     32  ; ABSTRACT:
0000     33  ;
0000     34  ;         THIS MODULE CONTAINS SUBROUTINES WHICH, WHEN LINKED
0000     35  ; WITH SUCCOMMON.OBJ, FORM TEST MODULE SATSSS56 TO TEST SUCCESSFUL
0000     36  ; OPERATION OF THE 3 WAIT SYSTEM SERVICES. EACH SERVICE IS INVOKED
0000     37  ; UNDER VARIOUS INPUT CONDITIONS WITH VARYING INPUT PARAMETERS. ONLY
0000     38  ; SUCCESSFUL STATUS CODES ARE EXPECTED IN THIS TEST MODULE.  CORRECT
0000     39  ; OPERATION OF EACH SERVICE FOR EACH OF ITS ISSUANCES IS VERIFIED BY
0000     40  ; CHECKING FOR AN SS$ NORMAL STATUS CODE, EXPECTED RETURN ARGUMENTS
0000     41  ; AND EXPECTED FUNCTIONALITY PERFORMED.
0000     42  ;
0000     43  ; ENVIRONMENT: USER MODE IMAGE; NEEDS CMKRNL PRIVILEGE,
0000     44  ;                 DYNAMICALLY ACQUIRES OTHER PRIVILEGES, AS NEEDED.
0000     45  ;
0000     46  ; AUTHOR: THOMAS L. CAFARELLA,          CREATION DATE: OCT, 1977
0000     47  ;
0000     48  ; MODIFIED BY:
0000     49  ;
0000     50  ;          VERSION 1.5 : 25-MAY-79
0000     51  ;
0000     52  ; 01  LDJ  10/11/79    Fixed bug caused by DIB$K_LENGTH change ACG052.RNO mem
0000     53  ;
0000     54  ;--
```

SATSSS56
V04-000

H 6
SATS SYSTEM SERVICE TESTS WAITS (SUCC S 16-SEP-1984 00:58:38 VAX/VMS Macro V04-00   Page   2
DECLARATIONS   5-SEP-1984 04:32:34 [UETPSY.SRC]SATSSS56.MAR;1   (1)

```
                        0000        56              .SBTTL  DECLARATIONS
                        0000        57      ;
                        0000        58      ; INCLUDE FILES:
                        0000        59      ;
                        0000        60              $PRVDEF                                 ; PRIVILEGE BIT DEFINITIONS
                        0000        61              $PHDDEF                                 ; PROCESS HEADER OFFSETS
                        0000        62              $PQLDEF
                        0000        63              $DIBDEF                         ; DEVICE INFO BLOCK OFFSETS
                        0000        64      ;
                        0000        65      ; MACROS:
                        0000        66      ;
                        0000        67      ;
                        0000        68      ; EQUATED SYMBOLS:
                        0000        69      ;
          FF000001      0000        70      EFGRO_MASK      = ^XFF000001                    ; FLAGS USED BY SYSTEM IN EVENT FLAG GROUP 0
          12345678      0000        71      PROC_CONS       = ^X12345678                    ; PROCESSING CONSTANT -- IN R0 UNTIL WAIT
                        0000        72                                                      ; ... SERVICE REPLACES IT WITH A STATUS CODE
                        0000        73      ;
                        0000        74      ; BIT NUMBERS FOR FLAGS CONTAINED IN ''FLAGS'' BYTE:
                        0000        75      ;
          00000000      0000        76      EXP_WAIT        = 0                             ; WAIT EXPECTED WHEN SUBJECT SERVICE ISSUED
          00000001      0000        77      REC_WAIT        = 1                             ; WAIT RECEIVED AFTER SUBJECT SERVICE ISSUED
          00000002      0000        78      PROCESSING      = 2                             ; MAIN ROUTINE PROCESSING WHEN AST DELIVERED
          00000003      0000        79      WAITING         = 3                             ; MAIN ROUTINE IN E.F. WAIT WHEN AST DELIV'D
          00000004      0000        80      FELLTHRU        = 4                             ; MAIN RTN HAD FALLEN THRU WAIT BY AST DEL'Y
          00000005      0000        81      ASTLOOP         = 5                             ; AST RE-ENTERED TOO OFTEN WITHOUT WAITING
          00000006      0000        82      CLUSCHG         = 6                             ; CLUSTER CHANGED ACROSS A WAIT
                        0000        83      ;
                        0000        84      ; OWN STORAGE:
                        0000        85      ;
```

```
                   00000000      87              .PSECT  RODATA,RD,NOWRT,NOEXE,LONG
                       0000      88 TEST_MOD_NAME::  STRING  C,<SATSSS56>       ; TEST MODULE NAME
                       0009      89 TEST_MOD_NAME_D: STRING  I,<SATSSS56>       ; TEST MODULE NAME DESCRIPTOR
                       0019      90 MSG1_INP_CTL:    STRING  I,< SSWAT!4ZW: CONDITIONS:>
                       0039      91                                            ; FAO CTL STRING FOR MSG1 IN SUCCOMMON.MAR
                       0039      92 MSG3_ERR_CTL::   STRING  I,< *SSWAT!4ZW: !AS>
                       0051      93                                            ; FAO CTL STRING FOR MSG3 IN SUCCOMMON.MAR
                       0051      94 CREPRN:          STRING  I,<SATSSS56_CRE>   ; CREATED PROCESS NAME
                       0065      95 CLUS_NAME:       STRING  I,<SATSSS56_CLUS>  ; SUBJECT CLUSTER NAME
                       007A      96 IMAGNAM:         STRING  I,<SYSTST$RES:SATSUT11.EXE> ; IMAGE NAME FOR CREATED PROC
   FFFFFFFF FFFFD8F0   0099      97 TIMEINCR:        .LONG   -10*1000,-1        ; DELTA TIME OF 1 MILLISECOND
                       00A1      98 CHMKADD:                                    ; THE FOLLOWING 3 LONGWORDS ARE THE
          00000002'    00A1      99                  .ADDRESS SYS$WAITFR+2      ; ... CHMK ADDRESSES IN THE SYSTEM SERVICE
          00000002'    00A5     100                  .ADDRESS SYS$WFLAND+2      ; ... VECTORS FOR SYS$WAITFR, SYS$WFLAND,
          00000002'    00A9     101                  .ADDRESS SYS$WFLOR+2       ; ... AND SYS$WFLOR, RESPECTIVELY.
                       00AD     102 QUOTALIST:       $QUOTA  CPULM,0            ; INFINITE CPU
                       00B2     103                  $QUOTA  BYTLM,512          ; BYTE LIMIT FOR BUFFERED I/O
                       00B7     104                  $QUOTA  FILLM,2            ; OPEN FILE COUNT LIMIT
                       00BC     105                  $QUOTA  PGFLQUOTA,10       ; PAGING FILE QUOTA
                       00C1     106                  $QUOTA  PRCLM,2            ; SUBPROCESS QUOTA
                       00C6     107                  $QUOTA  TQELM,3            ; TIMER QUEUE ENTRY QUOTA
                       00CB     108                  $QUOTA  LISTEND            ; DEFINES END OF LIST
```

```
        00000000    110                .PSECT  RWDATA,RD,WRT,NOEXE,LONG
00000008  0000    111  PRIVMASK:       .BLKQ   1                      ; ADDR OF PRIVILEGE MASK (IN PHD)
0000000C  0008    112  MBXCHAN:        .BLKL   1                      ; CHAN NO. FOR MAILBOX FOR CREATED PROCESS
          000C    113  MBXCHANINFO:                                   ; CHANNEL INFO RETURNED BY GETCHN
00000074  000C    114                  .LONG   DIB$K_LENGTH
00000014' 0010    115                  .ADDRESS .+4
00000088  0014    116                  .BLKB   DIB$K_LENGTH
0000008C  0088    117  MBXUNIT:        .BLKL   1                      ; SAVE AREA FOR MAILBOX UNIT NUMBER
          008C    118  MBXBUFF:        STRING  0,120                  ; MAILBOX BUFFER FOR CREATED PROCESS
00000110  010C    119  SUBJ_MASK:      .BLKL   1                      ; MASK TO BE SPECIFIED ON WAIT SYST SERVICES
00000114  0110    120  TRIAL_MASK:     .BLKL   1                      ; CLUSTER MASK; USED TO SET SUBJECT CLUSTER
00000116  0114    121  TM_WORK:        .BLKW   1                      ; WORK AREA FOR TRIAL MASK
0000011A  0116    122  CLOS_STATE:     .BLKL   1                      ; STATE OF SUBJECT CLUSTER
      00  011A    123  CONSEC_P:       .BYTE   0                      ; COUNT OF CONSEC. "PROCESSING" AST ENTRIES
      00  011B    124  FLAGS:          .BYTE   0                      ; GEN. PURP. FLAGS; BIT DEFINITIONS ABOVE
      00  011C    125  PROCFLAG:       .BYTE   0                      ; PROCESS FLAG; 0 = CREATED PROC NON-EXIST.
```

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K 6
SATS SYSTEM SERVICE TESTS WAITS (SUCC S 16-SEP-1984 00:58:38 VAX/VMS Macro V04-00   Page 5
CONDITION TABLES   5-SEP-1984 04:32:34 [UETPSY.SRC]SATSSS56.MAR;1   (1)

```
                    011D    127           .SBTTL   CONDITION TABLES
                    011D    128  ;
                    011D    129  ;        ***** CONDITION TABLES FOR WAIT SYSTEM SERVICES *****
                    011D    130  ;
                    011D    131           COND     1,NOTARG,<WHERE WAITS ARE CLEARED>,-
                    011D    132                     <IN A DIFFERENT PROCESS>,-
                    011D    133                     <IN THE SAME PROCESS>,-
                    011D    134
                    0169    135           COND     2,NOTARG,<TYPE OF WAIT SYSTEM SERVICE>,-
                    0169    136                     <$WAITFR>,-
                    0169    137                     <$WFLAND>,-
                    0169    138                     <$WFLOR>,-
                    0169    139
                    01A9    140           COND     3,LONG,<EFN>,-
                    01A9    141                     <EVENT FLAGS 0-31 (EV FLAG GROUP 0)>,-
                    01A9    142                     <EVENT FLAGS 32-63 (EV FLAG GROUP 1)>,-
                    01A9    143                     <EVENT FLAGS 64-95 (EV FLAG GROUP 2)>,-
                    01A9    144                     <EVENT FLAGS 96-127 (EV FLAG GROUP 3)>,-
                    01A9    145
00000000            024E    146                     .LONG     0     ; EVENT FLAG GROUP (CLUSTER) 0
00000020            0252    147                     .LONG     32    ; EVENT FLAG GROUP (CLUSTER) 1
00000040            0256    148                     .LONG     64    ; EVENT FLAG GROUP (CLUSTER) 2
00000060            025A    149                     .LONG     96    ; EVENT FLAG GROUP (CLUSTER) 3
                    025E    150  ;
                    025E    151           COND     4,LONG,<MASK>,-
                    025E    152                     <ALL 1-BITS>,-
                    025E    153                     <MIXED 0- AND 1-BITS>,-
                    025E    154
FFFFFFFF            028B    155                     .LONG     ^XFFFFFFFF ; ALL 1-BITS
53544942            028F    156                     .LONG     ^A/BITS/   ; MIXED BITS
                    0293    157  ;
                    0293    158           COND     5,NULL
                    0294    159
00000000            160           .PSECT   SATSSS56,RD,WRT,EXE
```

SATSSS56
V04-000

L 6
SATS SYSTEM SERVICE TESTS WAITS (SUCC S 16-SEP-1984 00:58:38 VAX/VMS Macro V04-00   Page 6
TM_SETUP, TM_CLEANUP   5-SEP-1984 04:32:34 [UETPSY.SRC]SATSSS56.MAR;1   (1)

```
                        0000    162              .SBTTL  TM_SETUP, TM_CLEANUP
                        0000    163  ;++
                        0000    164  ; FUNCTIONAL DESCRIPTION:
                        0000    165  ;
                        0000    166  ;               TM_SETUP AND TM_CLEANUP ARE CALLED TO PERFORM
                        0000    167  ; REQUIRED HOUSEKEEPING AT THE BEGINNING AND END, RESPECTIVELY, OF
                        0000    168  ; TEST MODULE EXECUTION.
                        0000    169  ;
                        0000    170  ; CALLING SEQUENCE:
                        0000    171  ;
                        0000    172  ;      BSBW TM_SETUP    BSBW TM_CLEANUP
                        0000    173  ;
                        0000    174  ; INPUT PARAMETERS:
                        0000    175  ;
                        0000    176  ;      NONE
                        0000    177  ;
                        0000    178  ; IMPLICIT INPUTS:
                        0000    179  ;
                        0000    180  ;      NONE
                        0000    181  ;
                        0000    182  ; OUTPUT PARAMETERS:
                        0000    183  ;
                        0000    184  ;      NONE
                        0000    185  ;
                        0000    186  ; IMPLICIT OUTPUTS:
                        0000    187  ;
                        0000    188  ;      TM_SETUP:  COND TABLE INDEX REGISTERS (R2,3,4,5,6) CLEARED;
                        0000    189  ;                 ALL PRIVILEGES ACQUIRED.
                        0000    190  ;
                        0000    191  ; COMPLETION CODES:
                        0000    192  ;
                        0000    193  ;      EFLAG SET TO NON-ZERO IF ERROR ENCOUNTERED.
                        0000    194  ;
                        0000    195  ; SIDE EFFECTS:
                        0000    196  ;
                        0000    197  ;      SS_CHECK AND ERR_EXIT MACROS CAUSE PREMATURE EXIT
                        0000    198  ;      (VIA RSB) IF ERROR ENCOUNTERED.
                        0000    199  ;
                        0000    200  ;--
                        0000    201
                        0000    202
                        0000    203
                        0000    204  TM_SETUP::
              52   D4   0000    205              CLRL    R2                          ; INITIALIZE
              53   D4   0002    206              CLRL    R3                          ; .. CONDITION
              54   D4   0004    207              CLRL    R4                          ; .... TABLE
              55   D4   0006    208              CLRL    R5                          ; ...... INDEX
              56   D4   0008    209              CLRL    R6                          ; ........ REGISTERS
           FFF3'  30   000A    210              BSBW    MOD_MSG_PRINT               ; PRINT TEST MODULE BEGIN MSG
  00000000'EF  00000000'EF  DE  000D    211              MOVAL   TEST_MOD_SUCC,TMD_ADDR ; ASSUME END MSG WILL SHOW SUCCESS
     03   00  00000000'8F  F0  0018    212              INSV    #SUCCESS,#0,#3,MOD_MSG_CODE ; ADJUST STATUS CODE FOR SUCCESS
           00000000'EF       0020
                        0025    213              MODE    TO,5$,KRNL                 ; KERNEL MODE TO ACCESS PHD
     59  00000000'9F  DO  0048    214              MOVL    a#CTL$GL_PHD,R9            ; GET PROCESS HEADER ADDRESS
  00000000'EF   69  DE  004F    215              MOVAL   PHD$Q_PRIVMSK(R9),PRIVMASK ; GET PRIV MASK ADDRESS
                        0056    216              MODE    FROM,5$ ; BACK TO USER MODE
                        0057    217              PRIV    ADD,ALL                    ; GET ALL PRIVILEGES
```

```
                        0077  218              $SETPRN_S TEST_MOD_NAME_D           ; SET PROCESS NAME
                        0084  219              SS_CHECK NORMAL                     ; CHECK STATUS CODE RETURNED FROM SETPRN
                        00B2  220      ;
                        00B2  221      ; GET 2 COMMON EVENT FLAG GROUPS ASSOCIATED FOR LATER USE
                        00B2  222      ; ALSO, CREATE A PROCESS & ITS ASSOCIATED MAILBOX
                        00B2  223      ;
                        00B2  224              $ASCEFC_S EFN=#64, NAME=CLUS_NAME   ; ASSOCIATE GROUP 2
                        00C9  225              SS_CHECK NORMAL                     ; CHECK FOR NORMAL STATUS CODE
                        00F7  226              $ASCEFC_S EFN=#96, NAME=CLUS_NAME   ; ASSOCIATE GROUP 3
                        010E  227              SS_CHECK NORMAL                     ; CHECK FOR NORMAL STATUS CODE
                        013C  228              $CREMBX_S CHAN=MBXCHAN, LOGNAM=CREPRN, -
                        013C  229                      MAXMSG=#120, PROMSK=#0, BUFQUO=#240
                        0161  230                                                 ; GET MAILBOX FOR PROCESS
                        0161  231              SS_CHECK NORMAL                     ; CHECK NORMAL COMPLETION
                        018F  232              $GETCHN_S CHAN=MBXCHAN, PRIBUF=MBXCHANINFO
                        01A9  233                                                 ; GET CHANNEL INFO (UNIT NUMBER)
                        01A9  234              SS_CHECK NORMAL                     ; CHECK NORMAL COMPLETION
00000088'EF  00000020'EF  3C  01D7  235        MOVZWL  MBXCHANINFO+8+DIB$W_UNIT,MBXUNIT
                        01E2  236                                                 ; SAVE MAILBOX UNIT NUMBER
                        01E2  237              $CREPRC_S PRCNAM=CREPRN, IMAGE=IMAGNAM, -
                        01E2  238                      MBXUNT=MBXUNIT, QUOTA=QUOTALIST
                        0214  239                                                 ; CREATE PROCESS WHICH WILL CLEAR WAITS
                        0214  240              SS_CHECK NORMAL                     ; CHECK ITS COMPLETION
0000011C'EF  01  90  0242  241              MOVB    #1,PROCFLAG                 ; INDICATE CREATED PROCESS EXISTS
             05  0249  242              RSB                                 ; RETURN TO MAIN ROUTINE
                        024A  243      TM_CLEANUP::
0000011C'EF  95  024A  244              TSTB    PROCFLAG                    ; DOES CREATED PROCESS EXIST ?
             3E  13  0250  245              BEQL    10$                         ; NO -- SKIP PROCESS-RELATED SERVICES
                        0252  246              $FORCEX_S PRCNAM=CREPRN, CODE=#SS$_NORMAL
                        0267  247                                                 ; FORCE SUBPROCESS TO EXIT & BE DELETED
                        0267  248              $QIOW_S CHAN=MBXCHAN, FUNC=#IO$_READVBLK, -
                        0267  249                      P1=MBXBUFF+8, P2=MBXBUFF
                        0290  250                                                 ; WAIT FOR IT TO SEND MAIL
                        0290  251      10$:
                        0290  252              $DELMBX_S  MBXCHAN                  ; DELETE TERMINATION MAILBOX
                        029E  253              $DACEFC_S EFN=#64                   ; DISASSOCIATE ......
                        02AB  254              $DACEFC_S EFN=#96                   ; .... COMMON CLUSTERS
FD45'  30  02B8  255              BSBW    MOD_MSG_PRINT               ; PRINT TEST MODULE END MSG
       05  02BB  256              RSB                                 ; RETURN TO MAIN ROUTINE
```

```
        02BC    258                 .SBTTL   CONDITION SUBROUTINES - SETUP AND CLEANUP
        02BC    259         ;++
        02BC    260         ; FUNCTIONAL DESCRIPTION:
        02BC    261         ;
        02BC    262         ;              CONDX AND CONDX_CLEANUP ARE SUBROUTINES WHICH ARE EXECUTED
        02BC    263         ; BEFORE AND AFTER THE VERIFY SUBROUTINE, RESPECTIVELY, WHENEVER A NEW
        02BC    264         ; CONDITION X VALUE IS SELECTED (SEE FUNCTIONAL DESCRIPTION OF SUCCOMMON
        02BC    265         ; ROUTINE IN SUCCOMMON.MAR). ANY SETUP FUNCTION PARTICULAR TO THE
        02BC    266         ; CONDITION X TABLE IS INCLUDED IN THE CONDX SUBROUTINE AND CLEANED
        02BC    267         ; UP, IF NECESSARY, IN THE CONDX_CLEANUP SUBROUTINE. THIS INCLUDES,
        02BC    268         ; ESPECIALLY, CODE TO DETECT CONFLICTS AMONG CURRENT ENTRIES IN TWO
        02BC    269         ; OR MORE CONDITION TABLES. IF A CONFLICT IS DETECTED, A NON-ZERO
        02BC    270         ; VALUE IS STORED INTO CONFLICT, WHICH CAUSES THE CALLING ROUTINE
        02BC    271         ; (SUCCOMMON) TO SKIP THE CURRENT ENTRY IN THE CONDITION X TABLE.
        02BC    272         ;
        02BC    273         ; CALLING SEQUENCE:
        02BC    274         ;
        02BC    275         ;     BSBW CONDX   BSBW CONDX_CLEANUP
        02BC    276         ;        WHERE X = 1,2,3,4,5
        02BC    277         ;
        02BC    278         ; INPUT PARAMETERS:
        02BC    279         ;
        02BC    280         ;     CONFLICT = 0
        02BC    281         ;
        02BC    282         ; IMPLICIT INPUTS:
        02BC    283         ;
        02BC    284         ;     R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
        02BC    285         ;        FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
        02BC    286         ;
        02BC    287         ; OUTPUT PARAMETERS:
        02BC    288         ;
        02BC    289         ;     CONFLICT SET TO NON-ZERO IF COND TABLE CONFLICT DETECTED.
        02BC    290         ;
        02BC    291         ; IMPLICIT OUTPUTS:
        02BC    292         ;
        02BC    293         ;     R2,3,4,5,6 PRESERVED
        02BC    294         ;
        02BC    295         ; COMPLETION CODES:
        02BC    296         ;
        02BC    297         ;     NONE
        02BC    298         ;
        02BC    299         ; SIDE EFFECTS:
        02BC    300         ;
        02BC    301         ;     NONE
        02BC    302         ;
        02BC    303         ;--
        02BC    304
        02BC    305
        02BC    306
        02BC    307         COND1::
     05 02BC    308                 RSB                                     ; RETURN TO MAIN ROUTINE
        02BD    309         COND1_CLEANUP::
     05 02BD    310                 RSB                                     ; RETURN TO MAIN ROUTINE
        02BE    311         COND2::
     05 02BE    312                 RSB                                     ; RETURN TO MAIN ROUTINE
        02BF    313         COND2_CLEANUP::
     05 02BF    314                 RSB                                     ; RETURN TO MAIN ROUTINE
```

B 7

SATSSS56   SATS SYSTEM SERVICE TESTS WAITS (SUCC S 16-SEP-1984 00:58:38 VAX/VMS Macro V04-00   Page 9
V04-000   CONDITION SUBROUTINES - SETUP AND CLEANU 5-SEP-1984 04:32:34 [UETPSY.SRC]SATSSS56.MAR;1   (1)

```
                              02C0    315 COND3::
                              02C0    316 ;
                              02C0    317 ; CHECK FIRST FOR COND2/COND3 CONFLICT
                              02C0    318 ;
                        53 D5 02C0    319         TSTL    R3                      ; $WAITFR (SINGLE FLAG) ?
                        0A 12 02C2    320         BNEQU   10$                     ; NO -- GO CHECK COND1/COND3 CONFLICT
        20  0000024E'EF44 D1 02C4    321         CMPL    EFN[R4],#32             ; YES -- LOCAL EVENT FLAG GROUP 0 ?
                        12 19 02CC    322         BLSS    20$                     ; YES -- FLAGS USED BY SYST; GO SET CONFLICT
                              02CE    323 10$:                                    ; CHECK FOR COND1/COND3 CONFLICT
                        52 D5 02CE    324         TSTL    R2                      ; WAITS TO BE CLEARED IN DIFF PROCESS ?
                        19 12 02D0    325         BNEQU   COND3X                  ; NO -- ALL IS OK; JUST EXIT
  00000040 8F  0000024E'EF44 D1 02D2    326         CMPL    EFN[R4],#64             ; YES -- LOCAL EVENT FLAG GROUP ?
                        08 18 02DE    327         BGEQ    COND3X                  ; NO -- ALL IS OK; JUST EXIT
                              02E0    328                                         ; YES -- CAN'T SET LOCAL FLAGS IN DIFF PROC
                              02E0    329 20$:
  00000000'EF  00000000'EF 90 02E0    330         MOVB    ONES,CONFLICT           ; INDICATE CONFLICT
                              02EB    331 COND3X:
                        05 02EB    332         RSB                             ; RETURN TO MAIN ROUTINE
                              02EC    333 COND3_CLEANUP::
                        05 02EC    334         RSB                             ; RETURN TO MAIN ROUTINE
                              02ED    335 COND4::
                        05 02ED    336         RSB                             ; RETURN TO MAIN ROUTINE
                              02EE    337 COND4_CLEANUP::
                        05 02EE    338         RSB                             ; RETURN TO MAIN ROUTINE
                              02EF    339 COND5::
                        05 02EF    340         RSB                             ; RETURN TO MAIN ROUTINE
                              02F0    341 COND5_CLEANUP::
                        05 02F0    342         RSB                             ; RETURN TO MAIN ROUTINE
```

```
                                02F1      344              .SBTTL  FORM_CONDS
                                02F1      345  ;++
                                02F1      346  ; FUNCTIONAL DESCRIPTION:
                                02F1      347  ;
                                02F1      348  ;          FORM_CONDS FORMATS AND PRINTS INFORMATION ABOUT
                                02F1      349  ; THE CURRENT ELEMENT IN EACH OF THE CONDITION TABLES.
                                02F1      350  ;
                                02F1      351  ; CALLING SEQUENCE:
                                02F1      352  ;
                                02F1      353  ;     BSBW FORM_CONDS
                                02F1      354  ;
                                02F1      355  ; INPUT PARAMETERS:
                                02F1      356  ;
                                02F1      357  ;     NONE
                                02F1      358  ;
                                02F1      359  ; IMPLICIT INPUTS:
                                02F1      360  ;
                                02F1      361  ;     R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
                                02F1      362  ;       FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
                                02F1      363  ;     FOR X = 1,2,3,4,5 :
                                02F1      364  ;               CONDX_T - TITLE TEXT FOR CONDX TABLE
                                02F1      365  ;               CONDX_TAB - ELEMENT TEXT FOR CONDX TABLE
                                02F1      366  ;               CONDX_C - CONTEXT OF THE CONDX TABLE
                                02F1      367  ;               CONDX_E - DATA ELEMENTS OF THE CONDX TABLE
                                02F1      368  ;
                                02F1      369  ; OUTPUT PARAMETERS:
                                02F1      370  ;
                                02F1      371  ;     NONE
                                02F1      372  ;
                                02F1      373  ; IMPLICIT OUTPUTS:
                                02F1      374  ;
                                02F1      375  ;     NONE
                                02F1      376  ;
                                02F1      377  ; COMPLETION CODES:
                                02F1      378  ;
                                02F1      379  ;     NONE
                                02F1      380  ;
                                02F1      381  ; SIDE EFFECTS:
                                02F1      382  ;
                                02F1      383  ;     NONE
                                02F1      384  ;
                                02F1      385  ;--
                                02F1      386
                                02F1      387
                                02F1      388
                                02F1      389  FORM_CONDS::
                                02F1      390          $FAO_S  MSG1_INP_CTL,FAO_LEN,FAO_DESC,TESTNUM
                                0310      391                                         ; FORMAT CONDITIONS HEADER MSG
                     FCED'  30  0310      392          BSBW    OUTPUT_MSG             ; ... AND PRINT IT
                 14    00  91  0313      393          CMPB    #COND1_C,#NULL         ; IS CONDITION 1 NULL ?
                       03  12  0316      394          BNEQU   10$                    ; NO -- CONTINUE
                     00D7  31  0318      395          BRW     FORM_CONDSX            ; YES -- SUBROUTINE IS FINISHED
                                031B      396  10$:
     00000000'EF  0000011D'EF  DE  031B  397          MOVAL   COND1_T,MSG_A          ; SAVE ADDRESS OF CONDITION 1 TITLE FOR FAO
     00000000'EF  00000136'EF42 D0  0326  398          MOVL    COND1_TAB[R2],MSG_B    ; SAVE ADDR OF COND 1 CURR TEXT ELT FOR FAO
     00000000'EF    00  90  0332  399          MOVB    #CONDT_C,MSG_CTXT      ; SAVE CONDITION 1 CONTEXT FOR FAO
                                0339      400          MOV_VAL COND1_C,CONDT_E[R2],MSG_DATA1 ; GIVE COND 1 DATA VALUE TO FAO
```

```
                      FCC4'  30  0339   401        BSBW    WRITE_MSG2               ; FORMAT AND WRITE CONDITION 1 MSC
                 14 '00  91  033C   402        CMPB    #COND2_C,#NULL           ; IS CONDITION 2 NULL ?
                     03  12  033F   403        BNEQU   20$                      ; NO -- CONTINUE
                   00AE  31  0341   404        BRW     FORM_CONDSX              ; YES -- SUBROUTINE IS FINISHED
                            0344   405  20$:
 00000000'EF   00000169'EF  DE  0344   406        MOVAL   COND2_T,MSG_A            ; SAVE ADDRESS OF CONDITION 2 TITLE FOR FAO
 00000000'EF   00000186'EF43  D0  034F   407        MOVL    COND2_TAB[R3],MSG_B      ; SAVE ADDR OF COND 2 CURR TEXT ELT FOR FAO
        00000000'EF   00  90  035B   408        MOVB    #COND2_C,MSG_CTXT        ; SAVE CONDITION 2 CONTEXT FOR FAO
                            0362   409        MOV VAL COND2_C,COND2_E[R3],MSG_DATA1 ; GIVE COND 2 DATA VALUE TO FAO
                      FC9B'  30  0362   410        BSBB    WRITE_MSG2               ; FORMAT AND WRITE CONDITION 2 MSG
                 14 '04  91  0365   411        CMPB    #COND3_C,#NULL           ; IS CONDITION 3 NULL ?
                     03  12  0368   412        BNEQU   30$                      ; NO -- CONTINUE
                   0085  31  036A   413        BRW     FORM_CONDSX              ; YES -- SUBROUTINE IS FINISHED
                            036D   414  30$:
 00000000'EF   000001A9'EF  DE  036D   415        MOVAL   COND3_T,MSG_A            ; SAVE ADDRESS OF CONDITION 3 TITLE FOR FAO
 00000000'EF   000001AE'EF44  D0  0378   416        MOVL    COND3_TAB[R4],MSG_B      ; SAVE ADDR OF COND 3 CURR TEXT ELT FOR FAO
        00000000'EF   04  90  0384   417        MOVB    #COND3_C,MSG_CTXT        ; SAVE CONDITION 3 CONTEXT FOR FAO
                            038B   418        MOV VAL COND3_C,COND3_E[R4],MSG_DATA1 ; GIVE COND 3 DATA VALUE TO FAO
                      FC66'  30  0397   419        BSBB    WRITE_MSG2               ; FORMAT AND WRITE CONDITION 3 MSG
                 14 '04  91  039A   420        CMPB    #COND4_C,#NULL           ; IS CONDITION 4 NULL ?
                     53  13  039D   421        BEQLU   FORM_CONDSX              ; YES -- SUBROUTINE IS FINISHED
 00000000'EF   0000025E'EF  DE  039F   422        MOVAL   COND4_T,MSG_A            ; SAVE ADDRESS OF CONDITION 4 TITLE FOR FAO
 00000000'EF   00000264'EF45  D0  03AA   423        MOVL    COND4_TAB[R5],MSG_B      ; SAVE ADDR OF COND 4 CURR TEXT ELT FOR FAO
        00000000'EF   04  90  03B6   424        MOVB    #COND4_C,MSG_CTXT        ; SAVE CONDITION 4 CONTEXT FOR FAO
                            03BD   425        MOV VAL COND4_C,COND4_E[R5],MSG_DATA1 ; GIVE COND 4 DATA VALUE TO FAO
                      FC34'  30  03C9   426        BSBB    WRITE_MSG2               ; FORMAT AND WRITE CONDITION 4 MSG
                 14 '14  91  03CC   427        CMPB    #COND5_C,#NULL           ; IS CONDITION 5 NULL ?
                     21  13  03CF   428        BEQLU   FORM_CONDSX              ; YES -- SUBROUTINE IS FINISHED
 00000000'EF   00000293'EF  DE  03D1   429        MOVAL   COND5_T,MSG_A            ; SAVE ADDRESS OF CONDITION 5 TITLE FOR FAO
 00000000'EF   00000293'EF46  D0  03DC   430        MOVL    COND5_TAB[R6],MSG_B      ; SAVE ADDR OF COND 5 CURR TEXT ELT FOR FAO
        00000000'EF   14  90  03E8   431        MOVB    #COND5_C,MSG_CTXT        ; SAVE CONDITION 5 CONTEXT FOR FAO
                            03EF   432        MOV VAL COND5_C,COND5_E[R6],MSG_DATA1 ; GIVE COND 5 DATA VALUE TO FAO
                      FC0E'  30  03EF   433        BSBB    WRITE_MSG2               ; FORMAT AND WRITE CONDITION 5 MSG
                            03F2   434  FORM_CONDSX:
                     05  03F2   435        RSB                              ; RETURN TO CALLER
```

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E 7
SATS SYSTEM SERVICE TESTS WAITS (SUCC S 16-SEP-1984 00:58:38 VAX/VMS Macro V04-00   Page 12
VERIFY   5-SEP-1984 04:32:34 [UETPSY.SRC]SATSSS56.MAR;1   (1)

```
03F3    437                   .SBTTL  VERIFY
03F3    438          ;++
03F3    439          ; FUNCTIONAL DESCRIPTION:
03F3    440          ;
03F3    441          ;         VERIFY IS CALLED ONCE FOR EACH COMBINATION OF CONDITION
03F3    442          ; TABLE VALUES (AS DETERMINED BY THE INDEX REGISTERS R2,3,4,5,6 FOR
03F3    443          ; COND TABLES 1,2,3,4,5, RESPECTIVELY). VERIFY ESTABLISHES THE CONDITIONS
03F3    444          ; SPECIFIED BY THE COND TABLES AND ISSUES THE SUBJECT SYSTEM SERVICE
03F3    445          ; ($WAITFR, $WFLAND, $WFLOR). THEN, THE SUCCESSFUL OPERATION OF THE SERVICE
03F3    446          ; IS VERIFIED BY EXAMINING THE STATUS CODE RETURNED, THE VALUES FOR RETURN
03F3    447          ; ARGUMENTS AND THE FUNCTIONALITY PERFORMED. THE EXAMINATIONS TAKE THE
03F3    448          ; FORM OF COMPARISONS AGAINST EXPECTED VALUES. ANY FAILING COMPARISON
03F3    449          ; CAUSES AN ERR_EXIT MACRO TO BE EXECUTED (EITHER DIRECTLY, OR INDIRECTLY,
03F3    450          ; THROUGH THE SS_CHECK MACRO): ERR_EXIT SETS EFLAG TO NON-ZERO,
03F3    451          ; PRINTS ERROR MESSAGES AND CAUSES AN IMMEDIATE RSB TO CALLER.
03F3    452          ; WHEN ERR_EXIT IS EXECUTED, FURTHER CALLS TO VERIFY ARE SUPPRESSED,
03F3    453          ; AND, AFTER EXECUTING CLEANUP SUBROUTINES, THE IMAGE EXITS.
03F3    454          ;
03F3    455          ; CALLING SEQUENCE:
03F3    456          ;
03F3    457          ;     BSBW VERIFY
03F3    458          ;
03F3    459          ; INPUT PARAMETERS:
03F3    460          ;
03F3    461          ;     NONE
03F3    462          ;
03F3    463          ; IMPLICIT INPUTS:
03F3    464          ;
03F3    465          ;     R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
03F3    466          ;        FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
03F3    467          ;     FOR X = 1,2,3,4,5 :
03F3    468          ;           CONDX_E - ADDRESS OF TABLE OF DATA VALUES FOR CONDX
03F3    469          ;           TABLE. IF THE CONTEXT OF TABLE X IS A SYSTEM SERVICE
03F3    470          ;           ARGUMENT, THE ARGUMENT NAME MAY BE USED AS A SYNONYM
03F3    471          ;           FOR CONDX_E.
03F3    472          ;
03F3    473          ; OUTPUT PARAMETERS:
03F3    474          ;
03F3    475          ;     NONE
03F3    476          ;
03F3    477          ; IMPLICIT OUTPUTS:
03F3    478          ;
03F3    479          ;     VERIFY HAS NO OUTPUT. SINCE ITS PURPOSE IS TO TEST FOR ERRORS,
03F3    480          ;     IT MERELY RETURNS TO CALLER NORMALLY AFTER THE TESTS, PROVIDING
03F3    481          ;     ALL WERE SUCCESSFUL; IF AN ERROR IS DISCOVERED, RETURN IS VIA
03F3    482          ;     AN ERR_EXIT OR SS_CHECK MACRO, BOTH OF WHICH DOCUMENT DETECTED
03F3    483          ;     ERRORS.
03F3    484          ;
03F3    485          ; COMPLETION CODES:
03F3    486          ;
03F3    487          ;     EFLAG SET TO NON-ZERO IF ERROR ENCOUNTERED.
03F3    488          ;
03F3    489          ; SIDE EFFECTS:
03F3    490          ;
03F3    491          ;     SS_CHECK AND ERR_EXIT MACROS CAUSE PREMATURE EXIT
03F3    492          ;     (VIA RSB) IF ERROR ENCOUNTERED.
03F3    493          ;
```

```
                              03F3    494  ;--
                              03F3    495
                              03F3    496
                              03F3    497
                              03F3    498  VERIFY::
            00000000'EF   95  03F3    499          TSTB    CFLAG                    ; SHOULD CONDITIONS BE PRINTED ?
                    03   13  03F9    500          BEQL    5$                       ; NO -- CONTINUE
                  FEF3   30  03FB    501          BSBW    FORM_CONDS               ; YES -- FMT & PRINT ALL CONDS FOR THIS T.C.
                              03FE    502  5$:
                  FBFF'  30  03FE    503          BSBW    SAVE_REGS                ; SAVE REGS 2-6 FOR LATER USE IN AST ROUTINE
            00000114'EF   B4  0401    504          CLRW    TM_WORK                  ; INIT TRIAL MASK WORK AREA
 0000010C'EF  0000028B'EF45  D0  0407    505          MOVL    MASK[R5],SUBJ_MASK       ; GET SUBJECT MASK FOR THIS TEST CASE
         20  0000024E'EF44  D1  0413    506          CMPL    EFN[R4],#32              ; EVENT FLAG GROUP 0 ?
                    0B   18  041B    507          BGEQ    10$                      ; NO -- CONTINUE
 0000010C'EF   FF000001 8F  CA  041D    508          BICL2   #EFGR0_MASK,SUBJ_MASK    ; YES -- STEER CLEAR OF FLAGS USED BY SYS
                              0428    509  10$:
 00000110'EF  00000114'EF   90  0428    510          MOVB    TM_WORK,TRIAL_MASK       ; PROPAGATE TM_WORK ....
 00000111'EF  00000114'EF   90  0433    511          MOVB    TM_WORK,TRIAL_MASK+1     ; ... BYTE VALUE .......
 00000112'EF  00000110'EF   B0  043E    512          MOVW    TRIAL_MASK,TRIAL_MASK+2  ; ...... THRU TRIAL MASK
         5A  0000024E'EF44  D0  0449    513          MOVL    EFN[R4],R10              ; TELL BUILD_CLUST WHICH CLUSTER TO BUILD
                  02E1   30  0451    514          BSBW    BUILD_CLUST              ; ESTAB CLUSTER ACCORDING TO TRIAL_MASK
            00000000'EF   95  0454    515          TSTB    EFLAG                    ; IS AN ERROR BEING PROCESSED ?
                    03   13  045A    516          BEQL    15$                      ; NO -- CONTINUE
                  02D4   31  045C    517          BRW     VERIFYX                  ; YES -- RETURN IMMEDIATELY
                              045F    518  15$:
            0000011B'EF   94  045F    519          CLRB    FLAGS                    ; CLEAR ALL FLAGS
                  03FD   30  0465    520          BSBW    SETEXPBIT                ; SET EXPECTATION BIT
                              0468    521          $SETIMR_S DAYTIM=TIMEINCR, -     ; SCHEDULE AN AST IN 1 MILLISECOND
                              0468    522                  ASTADR=WAITAST
                              047F    523          SS_CHECK NORMAL                  ; CHECK SETIMR COMPLETION
         50   12345678 8F  D0  04AD    524          MOVL    #PROC_CONS,R0            ; CONSTANT IN R0 TO BE CHECKED IN AST
                              04B4    525
                              04B4    526  ; ***** ONE OF FOLLOWING WAIT CALLS IS THE SUBJECT OF THIS TEST CASE *****
                              04B4    527  ;
                    53   D5  04B4    528          TSTL    R3                       ; WAITFR (SINGLE FLAG) ?
                    10   12  04B6    529          BNEQU   20$                      ; NO -- CONTINUE
                              04B8    530          $WAITFR_S EFN=EFN[R4]            ; YES -- ISSUE SUBJECT SERVICE
                    2F   11  04C6    531          BRB     40$                      ; GO CHECK ITS COMPLETION
                              04C8    532  20$:
         01       53   D1  04C8    533          CMPL    R3,#1                    ; WFLAND ?
                    16   12  04CB    534          BNEQU   30$                      ; NO -- CONTINUE
                              04CD    535          $WFLAND_S EFN=EFN[R4], MASK=SUBJ_MASK
                              04E1    536                                          ; YES -- ISSUE SUBJECT SERVICE
                    14   11  04E1    537          BRB     40$                      ; GO CHECK ITS COMPLETION
                              04E3    538  30$:
                              04E3    539          $WFLOR_S EFN=EFN[R4], MASK=SUBJ_MASK ; MUST BE WFLOR
                              04F7    540  40$:
 00 0000011B'EF   04  E2  04F7    541          BBSS    #FELLTHRU,FLAGS,.+1      ; INDICATE THAT WAIT IS DONE
            00000000'8F   50  D1  04FF    542          CMPL    R0,#SS$_NORMAL          ; CODE RECEIVED = CODE EXPECTED ?
                    67   13  0506    543          BEQLU   50$                      ; YES -- CONTINUE
 00000000'EF   00000000'8F  D0  0508    544          MOVL    #SS$_NORMAL,EXPV        ; LOAD UP EXPECTED AND ...
            00000000'EF   50  D0  0513    545          MOVL    R0,RECV                 ; ... RECEIVED VALUES, THEN EXIT
                              051A    546          ERR_EXIT LONG,<INCORRECT STATUS CODE RETURNED FROM WAIT SERVICE>
                              056F    547  50$:
                              056F    548          $HIBER_S                         ; SLEEP UNTIL WAITAST CHECKS RESULTS OF SERV
 4B 0000011B'EF   05  E1  0576    549          BBC     #ASTLOOP,FLAGS,55$      ; CONTINUE IF NO AST LOOP
            00000000'EF   94  057E    550          CLRB    EXPV                     ; AST LOOP -- SET UP FOR ERR_EXIT
```

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                00000000'EF     94  0584    551           CLRB    RECV                      ; ............
                                    058A    552           ERR_EXIT BYTE,<UNSATISFIED WAIT CONDITION>
                                    05C9    553  55$:
        54 0000011B'EF    06  E1  05C9    554           BBC     #CLUSCHG,FLAGS,58$         ; CONTINUE IF NO CLUSTER CHANGE ERROR
                                    05D1    555           ERR_EXIT LONG,<CLUSTER EVENT FLAG SETTINGS CHANGED ACROSS WAIT>
                                    0625    556  58$:
        7D 0000011B'EF    00  E1  0625    557           BBC     #EXP_WAIT,FLAGS,70$        ; BRANCH IF FALL-THRU EXPECTED
        03 0000011B'EF    01  E1  062D    558           BBC     #REC_WAIT,FLAGS,60$        ; WAIT EXP'D; BRANCH IF FALL-THRU RECEIVED
                          00EF    31  0635    559           BRW     80$                       ; WAIT EXPECTED & RECEIVED; THAT'S OK
                                    0638    560  60$:
  00000000'EF    00000110'EF    D0  0638    561           MOVL    TRIAL_MASK,EXPV           ; SET UP TRIAL_MASK ....
  00000000'EF    00000110'EF    D0  0643    562           MOVL    TRIAL_MASK,RECV          ; .... FOR MSG, THEN EXIT
                                    064E    563           ERR_EXIT LONG,<WAIT EXP'D; FALL-THRU REC'D; VALUE IS CLUST BEFORE WAIT>
                                    06AA    564  70$:
        03 0000011B'EF    01  E0  06AA    565           BBS     #REC_WAIT,FLAGS,75$        ; BRANCH IF WAIT REC'D; THAT'S AN ERROR
                          0072    31  06B2    566           BRW     80$                       ; FALL-THRU EXPECTED & RECEIVED; THAT'S OK
                                    06B5    567  75$:
  00000000'EF    00000110'EF    D0  06B5    568           MOVL    TRIAL_MASK,EXPV           ; SET UP TRIAL_MASK ....
  00000000'EF    00000110'EF    D0  06C0    569           MOVL    TRIAL_MASK,RECV          ; .... FOR MSG, THEN EXIT
                                    06CB    570           ERR_EXIT LONG,<FALL-THRU EXP'D; WAIT REC'D; VALUE IS CLUST BEFORE WAIT>
                                    0727    571  80$:
F5 00000114'EF    01    00FF 8F  3D  0727    572           ACBW    #255,#1,TM_WORK,10$       ; MAKE NEW TRIAL_MASK & LOOP
                          FC  0751
                                    0733    573  VERIFYX:
                          05  0733    574           RSB                                       ; RETURN TO CALLER
```

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SATSSS56   SATS SYSTEM SERVICE TESTS WAITS (SUCC S 16-SEP-1984 00:58:38 VAX/VMS Macro V04-00   Page 15
V04-000   VFY_CLEANUP   5-SEP-1984 04:32:34 [UETPSY.SRC]SATSSS56.MAR;1   (1)

```
0734  576              .SBTTL  VFY_CLEANUP
0734  577      ;++
0734  578      ; FUNCTIONAL DESCRIPTION:
0734  579      ;
0734  580      ;           VFY_CLEANUP EXECUTES SYSTEM SERVICES TO UNDO THE
0734  581      ; EFFECT OF THOSE ISSUED IN THE VERIFY SUBROUTINE. VFY_CLEANUP MUST
0734  582      ; ASSUME THAT VERIFY MAY NOT HAVE EXECUTED IN ITS ENTIRETY (IF AN
0734  583      ; ERROR IS FOUND). ALSO, VFY_CLEANUP MAY ISSUE SS_CHECK OR ERR_EXIT
0734  584      ; ONLY AFTER PERFORMING ALL OF ITS CLEANUP OPERATIONS; THIS IS REQUIRED
0734  585      ; IN THE EVENT THAT VFY_CLEANUP IS CALLED DURING ERROR PROCESSING,
0734  586      ; WHEN PERFORMING THE REQUIRED CLEANUP IS MORE IMPORTANT THAN
0734  587      ; POSSIBLY DISCOVERING A SECOND ERROR.
0734  588      ;
0734  589      ; CALLING SEQUENCE:
0734  590      ;
0734  591      ;     BSBW VFY_CLEANUP
0734  592      ;
0734  593      ; INPUT PARAMETERS:
0734  594      ;
0734  595      ;     NONE
0734  596      ;
0734  597      ; IMPLICIT INPUTS:
0734  598      ;
0734  599      ;     R2,3,4,5,6 CONTAIN CURRENT CONDITION TABLE INDEX VALUES
0734  600      ;        FOR COND TABLES 1,2,3,4,5, RESPECTIVELY.
0734  601      ;     FOR X = 1,2,3,4,5 :
0734  602      ;           CONDX_E - ADDRESS OF TABLE OF DATA VALUES FOR CONDX
0734  603      ;           TABLE. IF THE CONTEXT OF TABLE X IS A SYSTEM SERVICE
0734  604      ;           ARGUMENT, THE ARGUMENT NAME MAY BE USED AS A SYNONYM
0734  605      ;           FOR CONDX_E.
0734  606      ;
0734  607      ; OUTPUT PARAMETERS:
0734  608      ;
0734  609      ;     NONE
0734  610      ;
0734  611      ; IMPLICIT OUTPUTS:
0734  612      ;
0734  613      ;     NONE
0734  614      ;
0734  615      ; COMPLETION CODES:
0734  616      ;
0734  617      ;     EFLAG SET TO NON-ZERO IF ERROR ENCOUNTERED.
0734  618      ;
0734  619      ; SIDE EFFECTS:
0734  620      ;
0734  621      ;     SS_CHECK AND ERR_EXIT MACROS CAUSE PREMATURE EXIT
0734  622      ;     (VIA RSB) IF ERROR ENCOUNTERED.
0734  623      ;
0734  624      ;--
0734  625
0734  626
0734  627
0734  628  VFY_CLEANUP::
05  0734  629      RSB                                           ; RETURN TO CALLER
```

```
                                    0735  631              .SBTTL  BUILD_CLUST SUBROUTINE
                                    0735  632         ;
                                    0735  633         ;********************************************************************
                                    0735  634         ;
                                    0735  635         ;        BUILD_CLUST SUBROUTINE
                                    0735  636         ;
                                    0735  637         ;        THIS SUBROUTINE SETS THE SUBJECT CLUSTER EQUAL TO
                                    0735  638         ;           THE TRIAL MASK BY ISSUING THE PROPER COMBINATION
                                    0735  639         ;           OF 32 SETEF/CLREF'S. THEN A READEF IS ISSUED AND
                                    0735  640         ;           THE NEW CLUSTER SETTINGS ARE VERIFIED.
                                    0735  641         ;
                                    0735  642         ;        INPUTS:
                                    0735  643         ;
                                    0735  644         ;            R10        -       THE LOW-ORDER EFN IN THE SUBJECT CLUSTER
                                    0735  645         ;
                                    0735  646         ;            TRIAL_MASK  -    LONGWORD CONTAINING THE MASK TO
                                    0735  647         ;                               WHICH THE SUBJECT CLUSTER IS
                                    0735  648         ;                               TO BE SET.
                                    0735  649         ;
                                    0735  650         ;        OUTPUTS:
                                    0735  651         ;
                                    0735  652         ;            SUBJECT CLUSTER - UPDATED TO LOOK LIKE TRIAL_MASK.
                                    0735  653         ;
                                    0735  654         ;            CLUS_STATE   -    LONGWORD CONTAINING THE IMAGE
                                    0735  655         ;                               OF THE NEWLY SET SUBJECT CLUSTER.
                                    0735  656         ;
                                    0735  657         ;        VOLATILE REGISTERS:
                                    0735  658         ;
                                    0735  659         ;            R0, R1, R8, R9
                                    0735  660         ;
                                    0735  661         ;********************************************************************
                                    0735  662
                                    0735  663  BUILD_CLUST:
                    58   5A   DO   0735  664              MOVL     R10,R8                      ; ESTABLISH FIRST EFN (EVENT FLAG NO.)
                         59   D4   0738  665              CLRL     R9                          ; INIT OFFSET INTO TRIAL_MASK
                                   073A  666  20$:
      3A 00000110'EF   59   EO   073A  667              BBS      R9,TRIAL_MASK,30$           ; ISSUE $SETEF IF BIT FOR THIS FLAG IS SET
                                   0742  668              $CLREF_S EFN=R8                      ; ... OTHERWISE, ISSUE $CLREF
                    68   50   E8   074B  669              BLBS     R0,40$                      ; IF NORMAL STATUS, PROCESS NEXT EVENT FLAG
                                   074E  670              SS_CHECK NORMAL                      ; USE SS_CHECK TO TERMINATE TEST MODULE
                                   077C  671  30$:
                                   077C  672              $SETEF_S EFN=R8                      ; SET CURRENT EVENT FLAG
                    2E   50   E8   0785  673              BLBS     R0,40$                      ; IF NORMAL STATUS, PROCESS NEXT EVENT FLAG
                                   0788  674              SS_CHECK NORMAL                      ; USE SS_CHECK TO TERMINATE TEST MODULE
                                   07B6  675  40$:
                         58   B6   07B6  676              INCW     R8                          ; GET NEXT EFN
      FF7C 59   01   1F   9D   07B8  677              ACBB     #31,#1,R9,20$               ; GO DO NEXT EVENT FLAG
                                   07BE  678              $READEF_S EFN=R10, STATE=CLUS_STATE ; READ THE CLUSTER JUST BUILT
                    2E   50   E8   07CD  679              BLBS     R0,50$                      ; CONTINUE IF NORMAL COMPLETION
                                   07D0  680              SS_CHECK NORMAL                      ; USE SS_CHECK TO TERMINATE TEST MODULE
                                   07FE  681  50$:
  00000110'EF  00000116'EF   D1   07FE  682              CMPL     CLUS_STATE,TRIAL_MASK       ; DID CLUSTER GET BUILT OK ?
                         59   13   0809  683              BEQLU    BUILD_CLUSTX               ; YES -- SIMPLY EXIT
  00000000'EF  00000110'EF   DO   080B  684              MOVL     TRIAL_MASK,EXPV             ; NO -- LOAD EXPECTED AND ...
  00000000'EF  00000116'EF   DO   0816  685              MOVL     CLUS_STATE,RECV            ; ... RECEIVED VALUES, THEN EXIT
                                   0821  686              ERR_EXIT LONG,<TRIAL MASK NOT BUILT CORRECTLY>
                                   0864  687  BUILD_CLUSTX:
```

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V04-000

SATS SYSTEM SERVICE TESTS WAITS (SUCC S 16-SEP-1984 00:58:38 VAX/VMS Macro V04-00   Page 17
BUILD_CLUST SUBROUTINE   5-SEP-1984 04:32:34 [UETPSY.SRC]SATSSS56.MAR;1   (1)

```
05  0864   688        RSB                              ; RETURN TO CALLER
```

```
0865  690          .SBTTL  SETEXPBIT SUBROUTINE
0865  691  ;
0865  692  ;**************************************************************
0865  693  ;*
0865  694  ;*    SETEXPBIT SUBROUTINE
0865  695  ;*
0865  696  ;*  THIS SUBROUTINE DETERMINES WHETHER TO EXPECT A WAIT
0865  697  ;*   OR A FALL-THRU FROM THE UPCOMING ISSUANCE OF THE
0865  698  ;*   SUBJECT WAIT SYSTEM SERVICE FOR THIS TEST CASE.
0865  699  ;*   IF A WAIT IS EXPECTED, THE EXP WAIT BIT IS SET; IF
0865  700  ;*   A FALL-THRU IS EXPECTED, THE BIT IS NOT SET. THE
0865  701  ;*   ALGORITHM FOR DETERMINING WHICH STATE TO EXPECT DEPENDS
0865  702  ;*   ON WHICH OF THE THREE TYPES OF WAIT SYSTEM SERVICE
0865  703  ;*   WILL BE ISSUED FOR THIS TEST CASE.
0865  704  ;*
0865  705  ;*          $WAITFR (SINGLE EVENT FLAG):
0865  706  ;*                  IF THE LOW-ORDER BIT OF THE TRIAL MASK
0865  707  ;*                  IS SET, EXPECT A FALL-THRU; OTHERWISE,
0865  708  ;*                  EXPECT A WAIT.
0865  709  ;*
0865  710  ;*          $WFLAND:
0865  711  ;*                  DO A LOGICAL "AND" OF THE TRIAL_MASK WITH
0865  712  ;*                  THE SUBJECT MASK; IF THE RESULT EQUALS THE
0865  713  ;*                  SUBJECT MASK, EXPECT A FALL-THRU; OTHERWISE,
0865  714  ;*                  EXPECT A WAIT.
0865  715  ;*
0865  716  ;*          $WFLOR:
0865  717  ;*                  DO A LOGICAL "AND" OF THE TRIAL_MASK WITH
0865  718  ;*                  THE SUBJECT MASK; IF THE RESULT IS ZERO,
0865  719  ;*                  EXPECT A WAIT; OTHERWISE, EXPECT A FALL-THRU.
0865  720  ;*
0865  721  ;*  INPUTS:
0865  722  ;*
0865  723  ;*          R3      -       CONDITION TABLE 2 INDEX REG,
0865  724  ;*                          INDICATING TYPE OF WAIT SERVICE
0865  725  ;*
0865  726  ;*          SUBJ_MASK  -    SUBJECT MASK. LONGWORD DATA ITEM,
0865  727  ;*                          USED AS THE VALUE FOR THE MASK
0865  728  ;*                          ARGUMENT FOR $WFLAND & $WFLOR.
0865  729  ;*
0865  730  ;*          TRIAL_MASK -    TRIAL MASK. LONGWORD DATA ITEM,
0865  731  ;*                          WHOSE BIT PATTERN IS EQUAL TO THE
0865  732  ;*                          CURRENT SETTING OF THE SUBJECT
0865  733  ;*                          EVENT FLAG CLUSTER.
0865  734  ;*
0865  735  ;*  OUTPUTS:
0865  736  ;*
0865  737  ;*          EXP_WAIT  -     BIT IN FLAGS BYTE, SET TO 1 IF
0865  738  ;*                          A WAIT IS EXPECTED; REMAINS AS 0
0865  739  ;*                          IF FALL-THRU IS EXPECTED.
0865  740  ;*
0865  741  ;*  VOLATILE REGISTERS:
0865  742  ;*
0865  743  ;*          R7
0865  744  ;*
0865  745  ;**************************************************************
0865  746  ;
```

```
                           0865   747 SETEXPBIT:
                     53 D5 0865   748          TSTL    R3                          ; $WAITFR (SINGLE FLAG) ?
                     0F 12 0867   749          BNEQU   10$                         ; NO -- CONTINUE
        39 00000110'EF E8 0869   750          BLBS    TRIAL_MASK,SETEXPBITX       ; IF LOW BIT OF MASK SET, EXPECT A FALL-THRU
     31 0000011B'EF 00 E3 0870   751          BBCS    #EXP_WAIT,FLAGS,SETEXPBITX  ; SET EXPECT-WAIT BIT & EXIT
                           0878   752 10$:
        57 0000010C'EF D2 0878   753          MCOML   SUBJ_MASK,R7                ; LOGICALLY "AND" SUB_MASK ...
  57 00000110'EF 57 CB 087F   754          BICL3   R7,TRIAL_MASK,R7            ; ... WITH TRIAL_MASK, RESULT IN R7
              01 53 D1 0887   755          CMPL    R3,#1                       ; $WFLAND ?
                 0C 13 088A   756          BEQLU   20$                         ; YES -- GO TEST RESULT
                        088C   757                                              ; NO -- ASSUME $WFLOR
                 57 D5 088C   758          TSTL    R7                          ; RESULT ZERO ?
                 19 12 088E   759          BNEQU   SETEXPBITX                  ; NO -- EXPECT A FALL-THRU
     11 0000011B'EF 00 E3 0890   760          BBCS    #EXP_WAIT,FLAGS,SETEXPBITX  ; YES -- SET BIT & EXIT
                        0898   761 20$:
        0000010C'EF 57 D1 0898   762          CMPL    R7,SUBJ_MASK                ; RESULT = SUBJECT MASK ?
                 08 13 089F   763          BEQLU   SETEXPBITX                  ; YES -- EXPECT A FALL-THRU
  00 0000011B'EF 00 E3 08A1   764          BBCS    #EXP_WAIT,FLAGS,SETEXPBITX  ; NO -- SET BIT & EXIT
                        08A9   765 SETEXPBITX:
                    D5 08A9   766          RSB
```

```
                              08AA   768              .SBTTL   SETSTBIT SUBROUTINE
                              08AA   769 ;
                              08AA   770 ;          THE SETSTBIT SUBROUTINE SETS A STATE BIT INDICATING
                              08AA   771 ;          THE STATE OF THE MAIN (INTERRUPTED) ROUTINE WHEN
                              08AA   772 ;          THE WAITAST WAS DELIVERED.
                              08AA   773 ;
                              08AA   774 SETSTBIT:
  00 0000011B'EF   02  E4     08AA   775              BBSC     #PROCESSING,FLAGS,.+1     ; CLEAR "PROCESSING" ...
  00 0000011B'EF   03  E4     08B2   776              BBSC     #WAITING,FLAGS,.+1        ; ... AND "WAITING" FLAGS
  03 0000011B'EF   04  E1     08BA   777              BBC      #FELLTHRU,FLAGS,10$       ; CONTINUE IF NOT A FALL-THRU
              0027  31        08C2   778              BRW      SETSTBITX                 ; STATE BIT ALREADY SET ; JUST EXIT
                              08C5   779 10$:
000000A1'EF43   10 AC  D1     08C5   780              CMPL     16(AP),CHMKADD[R3]        ; PC POINTING TO WAIT'S CHMK ?
              14  12          08CE   781              BNEQU    20$                       ; NO -- GO SET "PROCESSING"
 12345678 8F   08 AC  D1      08D0   782              CMPL     8(AP),#PROC_CONS          ; YES -- PROCESSING CONST STILL SET IN R0 ?
              0A  13          08D8   783              BEQLU    20$                       ; YES -- WAIT SERVICE NOT EXECUTED YET
  00 0000011B'EF   03  E2     08DA   784              BBSS     #WAITING,FLAGS,.+1        ; NO -- PROCESS IS WAITING
              08  11          08E2   785              BRB      SETSTBITX                 ; EXIT
                              08E4   786 20$:
  00 0000011B'EF   02  E2     08E4   787              BBSS     #PROCESSING,FLAGS,.+1     ; INDICATE STILL PROCESSING
                              08EC   788 SETSTBITX:
              05             08EC   789              RSB                                ; RETURN TO CALLER (WAITAST RTN)
```

```
                                    08ED    791                    .SBTTL   WAITAST ROUTINE
                                    08ED    792  ;
                                    08ED    793  ; THIS AST ROUTINE IS ENTERED AFTER A 1-MILLISECOND TIMER EXPIRES.
                                    08ED    794  ; THE TIMER IS SET JUST BEFORE ISSUING A WAIT SYSTEM SERVICE. SINCE
                                    08ED    795  ; THE WAIT SERVICE IS FOLLOWED BY A $HIBER, THE MAIN ROUTINE HAS
                                    08ED    796  ; TO HAVE BEEN IN ONE OF THE THREE FOLLOWING STATES AT TIME OF AST
                                    08ED    797  ; INTERRUPT:
                                    08ED    798  ;
                                    08ED    799  ;        WAITING -- THE WAIT SYSTEM SERVICE CAUSED AN EVENT FLAG WAIT.
                                    08ED    800  ;                   THE WAIT WILL BE CLEARED BY ISSUING SETEF'S AND
                                    08ED    801  ;                   THE REC_WAIT BIT WILL BE SET.
                                    08ED    802  ;
                                    08ED    803  ;        FELLTHRU --   THE WAIT SYSTEM SERVICE DID NOT CAUSE AN
                                    08ED    804  ;                      EVENT FLAG WAIT (THIS IS A FALL-THRU).
                                    08ED    805  ;                      A $HIBER FOLLOWING THE WAIT WILL BE
                                    08ED    806  ;                      CLEARED WITH A $WAKE AND THE REC_WAIT
                                    08ED    807  ;                      BIT WILL BE CLEARED.
                                    08ED    808  ;
                                    08ED    809  ;        PROCESSING -- NEITHER OF THE ABOVE TWO STATES. IN THIS CASE,
                                    08ED    810  ;                      THE 1-MILLISECOND TIMER IS REPEATED, EXPECTING
                                    08ED    811  ;                      ONE OF THE OTHER TWO STATES TO BE REACHED EVENT-
                                    08ED    812  ;                      UALLY.
                                    08ED    813  ;
                                    08ED    814  WAITAST:
                              03FC  08ED    815           .WORD    ^M<R2,R3,R4,R5,R6,R7,R8,R9> ; ENTRY MASK
                      F70E'    30  08EF    816           BSBW     REST_REGS              ; RESTORE REGS 2-6 FOR USE IN AST
                      FFB5'    30  08F2    817           BSBW     SETSTBIT               ; DETERMINE STATE OF EXECUTION & SET BIT
          36 0000011B'EF  02  E1  08F5    818           BBC      #PROCESSING,FLAGS,10$  ; BRANCH IF NOT PROCESSING
          0A  0000011A'EF  91  08FD    819           CMPB     CONSEC_P,#10           ; 10 CONSECUTIVE "PROCESSING" AST ENTRIES ?
                            1D  18  0904    820           BGEQ     5$                     ; YES -- DO NOT RE-SCHEDULE THIS AST
              0000011A'EF  96  0906    821           INCB     CONSEC_P               ; NO -- LOG THIS OCCURRENCE
                                    090C    822           $SETIMR_S DAYTIM=TIMEINCR, -   ; STILL PROCESSING; RE-SCHEDULE THIS AST
                                    090C    823                    ASTADR=WAITAST
                            00E6  31  0920    824           BRW      WAITASTX               ; .... EXIT BACK TO INTERRUPTED CODE
                                    0923    825  5$:
          00 0000011B'EF  05  E2  0923    826           BBSS     #ASTLOOP,FLAGS,.+1     ; INDICATE ERROR FOR LATER PROCESSING
          00 0000011B'EF  03  E2  092B    827           BBSS     #WAITING,FLAGS,.+1     ; FAKE WAITING STATE TO CLEAR WAIT
                                    0933    828  10$:                                   ; EITHER WAITING OR FELLTHRU
              0000011A'EF  94  0933    829           CLRB     CONSEC_P               ; RE-INIT CNT OF CONSEC "PROCESSING" ENTRIES
                                    0939    830  ;
                                    0939    831  ; THE FOLLOWING CODE READS THE CLUSTER & COMPARES IT
                                    0939    832  ; AGAINST TRIAL_MASK FOR EQUALITY. IF EVENT FLAG GROUP 0,
                                    0939    833  ; COMPARE ONLY FLAGS 1-23, SINCE OTHERS MAY BE USED BY
                                    0939    834  ; SYSTEM OR TEST MODULE.
                                    0939    835  ;
                                    0939    836           $READEF_S EFN=EFN[R4], STATE=CLUS_STATE
                                    094D    837                                          ; GET STATE OF CLUSTER
          20  0000024E'EF44  D1  094D    838           CMPL     EFN[R4],#32            ; EVENT FLAG GROUP 0 ?
                            07  19  0955    839           BLSS     14$                    ; YES -- GO SPECIFY POS & SIZE FOR COMPARE
                            58  D4  0957    840           CLRL     R8                     ; NO -- SPECIFY POSITION FOR COMPARE
                      59  20  90  0959    841           MOVB     #32,R9                 ; SPECIFY SIZE OF TRIAL_MASK FOR COMPARE
                            06  11  095C    842           BRB      17$                    ; GO DO COMPARE
                                    095E    843  14$:
                      58  01  9A  095E    844           MOVZBL   #1,R8                  ; SPEC POSITION FOR E.F. GROUP 0
                      59  17  90  0961    845           MOVB     #23,R9                 ; .... AND SIZE
                                    0964    846  17$:
          57  00000116'EF  00000110'EF  CD  0964    847           XORL3    TRIAL_MASK,CLUS_STATE,R7 ; GET XOR OF 2 COMPARANDS
```

```
              00  57  59   58  EC  0970   848          CMPV    R8,R9,R7,#0             ; COMPARE FOR BIT MATCHES USING POS & SIZE
                            1E  13  0975   849          BEQLU   20$                    ; BITS MATCH -- CONTINUE
  00000000'EF    00000110'EF    D0  0977   850          MOVL    TRIAL_MASK,EXPV        ; MISMATCH -- LOAD EXPECTED ....
  00000000'EF    00000116'EF    D0  0982   851          MOVL    CLUS_STATE,RECV        ; ... AND RECEIVED VALUES
              00 0000011B'EF  06  E2  098D   852          BBSS    #CLUSCHG,FLAGS,.+1     ; INDICATE ERROR FOR LATER PROCESSING
                                0995   853   20$:
                                0995   854          $WAKE_S                        ; WAKE SELF TO SATISFY $HIBER
           03 0000011B'EF   03  E0  09A0   855          BBS     #WAITING,FLAGS,22$     ; BRANCH IF WAITING
                        005E  31  09A8   856          BRW     WAITASTX               ; MUST HAVE FALLEN THRU WAIT; JUST EXIT
                                09AB   857   22$:
              00 0000011B'EF  01  E2  09AB   858          BBSS    #REC_WAIT,FLAGS,.+1   ; SET 'WAIT RECEIVED" BIT & KEEP GOING
                            52  D5  09B3   859          TSTL    R2                     ; FIRST CONDITION 1 ELEMENT ?
                            1E  13  09B5   860          BEQLU   30$                    ; YES -- CLEAR WAIT IN CREATED PROCESS
                                09B7   861                                            ; NO -- CLEAR WAIT IN THIS PROCESS
           58   0000024E'EF44  D0  09B7   862          MOVL    EFN[R4],R8             ; ESTABLISH FIRST EFN IN CLUSTER
                            59  D4  09BF   863          CLRL    R9                     ; INIT OFFSET OF EFN IN CLUSTER
                                09C1   864   25$:
                                09C1   865          $SETEF_S EFN=R8                ; SET THIS EVENT FLAG
                            58  B6  09CA   866          INCW    R8                     ; POINT TO NEXT ONE
        FFEF  59    01   1F  9D  09CC   867          ACBB    #31,#1,R9,25$          ; LOOP BACK TO SET NEXT ONE
                          0034  31  09D2   868          BRW     WAITASTX               ; ALL DONE -- WAIT IS CLEARED
                                09D5   869   30$:
                                09D5   870          $WAKE_S PRCNAM=CREPRN          ; HAVE CREATED PROCESS ISSUE SETEF'S
                                09E4   871          $QIOW_S CHAN=MBXCHAN, FUNC=#IO$_READVBLK, -
                                09E4   872              P1=MBXBUFF+8, P2=#1
                                0A09   873                                            ; ... WAIT UNTIL HE SIGNALS 'DONE'
                                0A09   874   WAITASTX:
                            04  0A09   875          RET                            ; TERMINATE THIS AST
                                0A0A   876          .END
```

SATSSS56
Symbol table

C 8
SATS SYSTEM SERVICE TESTS WAITS (SUCC S 16-SEP-1984 00:58:38 VAX/VMS Macro V04-00   Page 23
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Symbol	Value		Symbol	Value	
$$$$	= 0000082B R	04	COND5_T	00000293 R	03
$$$CHARS	= 0000001E		COND5_TAB	00000293 R	03
$$$CHARS1	= 0000000A		CONFLICT	******** X	04
$$$CHARS2	= 00000013		CONSEC_P	0000011A R	03
$$$CHARS3	= 00000000		CREPRN	00000051 R	02
$$$CHARS4	= 00000000		CTL$GL_PHD	******** X	04
$$$CHARS5	= 00000000		DESC	= 00000010 G	
$$$COND_A	= 00000001		DIB$K_LENGTH	= 00000074	
$$$STRINGS	= 00000001		DIB$W_UNIT	= 0000000C	
$$$STRINGS2	= 00000005		EFGRO_MASK	= FF000001	
$$T1	= 00000001		EFLAG	******** X	04
$$T2	= 00000004		EFN	0000024E R	03
ASTLOOP	= 00000005		EXPV	******** X	04
BUILD_CLUST	00000735 R	04	EXP_WAIT	= 00000000	
BUILD_CLUSTX	00000864 R	04	FAO_DESC	******** X	04
BYTE	= 00000001 G		FAO_LEN	******** X	04
CFLAG	******** X	04	FEL_THRU	= 00000004	
CHMKADD	000000A1 R	02	FLAGS	0000011B R	03
CHMRTN	******** X	04	FORM_CONDS	000002F1 RG	04
CHM_CONT	******** X	04	FORM_CONDSX	000003F2 R	04
CLUSCHG	= 00000006		IMAGNAM	0000007A R	02
CLUS_NAME	00000065 R	02	IO$_READVBLK	******** X	04
CLUS_STATE	00000116 R	03	LONG	= 00000004 G	
COMP_SC	******** X	04	MASK	0000028B R	03
CONDT	000002BC RG	04	MBXBUFF	0000008C R	03
COND1_C	= 00000000		MBXCHAN	00000008 R	03
COND1_CLEANUP	000002BD RG	04	MBXCHANINFO	0000000C R	03
COND1_E	00000169 R	03	MBXUNIT	00000088 R	03
COND1_H	00000135 RG	03	MOD_MSG_CODE	******** X	04
COND1_T	0000011D R	03	MOD_MSG_PRINT	******** X	04
COND1_TAB	00000136 R	03	MSGT_INP_CTL	00000019 R	02
COND2	000002BE RG	04	MSG3_ERR_CTL	00000039 RG	02
COND2_C	= 00000000		MSG_A	******** X	04
COND2_CLEANUP	000002BF RG	04	MSG_B	******** X	04
COND2_E	000001A9 R	03	MSG_CTXT	******** X	04
COND2_H	00000185 RG	03	MSG_DATA1	******** X	04
COND2_T	00000169 R	03	NOTARG	= 00000000 G	
COND2_TAB	00000186 R	03	NULL	= 00000014 G	
COND3	000002C0 RG	04	ONES	******** X	04
COND3X	000002EB R	04	OUTPUT_MSG	******** X	04
COND3_C	= 00000004		PCV	******** X	04
COND3_CLEANUP	000002EC RG	04	PHD$Q_PRIVMSK	= 00000000	
COND3_E	0000024E R	03	PQL$_BYTLM	= 00000003	
COND3_H	000001AD RG	03	PQL$_CPULM	= 00000004	
COND3_T	000001A9 R	03	PQL$_FILLM	= 00000006	
COND3_TAB	000001AE R	03	PQL$_LISTEND	= 00000000	
COND4	000002ED RG	04	PQL$_PGFLQUOTA	= 00000007	
COND4_C	= 00000004		PQL$_PRCLM	= 00000008	
COND4_CLEANUP	000002EE RG	04	PQL$_TQELM	= 00000009	
COND4_E	0000028B R	03	PRIVMASK	00000000 R	03
COND4_H	00000263 RG	03	PRIV_ARGS	= 00000002	
COND4_T	0000025E R	03	PROCESSING	= 00000002	
COND4_TAB	00000264 R	03	PROCESS_ERR	******** X	04
COND5	000002EF RG	04	PROCFLAG	0000011C R	03
COND5_C	= 00000014		PROC_CONS	= 12345678	
COND5_CLEANUP	000002F0 RG	04	QUAD	= 00000008 G	
COND5_H	00000293 RG	03	QUOTALIST	000000AD R	02

SATSSS56
Symbol table

                                    D 8
            SATS SYSTEM SERVICE TESTS   WAITS (SUCC S 16-SEP-1984 00:58:38 VAX/VMS Macro V04-00   Page 24
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```
RECV                              ********   X   04
REC_WAIT              = 00000001
REST_REGS                         ********   X   04
SAVE_REGS                         ********   X   04
SETEXPBIT                           00000865 R   04
SETEXPBITX                          000008A9 R   04
SETSTBIT                            000008AA R   04
SETSTBITX                           000008EC R   04
SS$_NORMAL                        ********   X   04
SUBJ_MASK                           0000010C R   03
SUCCESS                           ********   X   04
SYS$ASCEFC                        ********  GX   04
SYS$CLREF                         ********  GX   04
SYS$CMKRNL                        ********  GX   04
SYS$CREMBX                        ********  GX   04
SYS$CREPRC                        ********  GX   04
SYS$DACEFC                        ********  GX   04
SYS$DELMBX                        ********  GX   04
SYS$FAO                           ********   X   04
SYS$FORCEX                        ********  GX   04
SYS$GETCHN                        ********  GX   04
SYS$HIBER                         ********  GX   04
SYS$QIOW                          ********  GX   04
SYS$READEF                        ********  GX   04
SYS$SETEF                         ********  GX   04
SYS$SETIMR                        ********  GX   04
SYS$SETPRN                        ********  GX   04
SYS$SETPRV                        ********  GX   04
SYS$WAITFR                        ********  GX   02
SYS$WAKE                          ********  GX   04
SYS$WFLAND                        ********  GX   02
SYS$WFLOR                         ********  GX   02
TESTNUM                           ********   X   04
TEST_MOD_NAME                       00000000 RG  02
TEST_MOD_NAME_D                     00000009 R   02
TEST_MOD_SUCC                     ********   X   04
TIMEINCR                            00000099 R   02
TMD_ADDR                          ********   X   04
TM_CLEANUP                          0000024A RG  04
TM_SETUP                            00000000 RG  04
TM_WORK                             00000114 R   03
TRIAL_MASK                          00000110 R   03
VERIFY                              000003F3 RG  04
VERIFYX                             00000733 R   04
VFY_CLEANUP                         00000734 RG  04
WAITAST                             000008ED R   04
WAITASTX                            00000A09 R   04
WAITING              = 00000003
WORD                 = 00000002   G
WRITE_MSG2                        ********   X   04
```

```
                              +-------------------+
                              ! Psect synopsis !
                              +-------------------+

PSECT name                       Allocation        PSECT No.   Attributes
----------                       ----------        ---------   ----------
.  ABS  .                        00000000 (     0.) 00 (  0.)  NOPIC   USR   CON   ABS   LCL NOSHR NOEXE NORD   NOWRT NOVEC BYTE
$ABS$                            00000000 (     0.) 01 (  1.)  NOPIC   USR   CON   ABS   LCL NOSHR   EXE   RD     WRT NOVEC BYTE
RODATA                           000000D0 (   208.) 02 (  2.)  NOPIC   USR   CON   REL   LCL NOSHR NOEXE   RD   NOWRT NOVEC LONG
RWDATA                           00000294 (   660.) 03 (  3.)  NOPIC   USR   CON   REL   LCL NOSHR NOEXE   RD     WRT NOVEC LONG
SATSSS56                         00000A0A (  2570.) 04 (  4.)  NOPIC   USR   CON   REL   LCL NOSHR   EXE   RD     WRT NOVEC BYTE

                              +---------------------------+
                              ! Performance indicators !
                              +---------------------------+
```

Phase	Page faults	CPU Time	Elapsed Time
Initialization	29	00:00:00.07	00:00:00.46
Command processing	107	00:00:00.63	00:00:03.37
Pass 1	325	00:00:10.04	00:00:22.96
Symbol table sort	0	00:00:00.69	00:00:00.92
Pass 2	176	00:00:02.84	00:00:03.95
Symbol table output	21	00:00:00.15	00:00:00.31
Psect synopsis output	2	00:00:00.03	00:00:00.03
Cross-reference output	0	00:00:00.00	00:00:00.00
Assembler run totals	662	00:00:14.45	00:00:32.01

The working set limit was 1500 pages.
54362 bytes (107 pages) of virtual memory were used to buffer the intermediate code.
There were 30 pages of symbol table space allocated to hold 388 non-local and 74 local symbols.
876 source lines were read in Pass 1, producing 29 object records in Pass 2.
55 pages of virtual memory were used to define 45 macros.

```
                              +------------------------------+
                              ! Macro library statistics !
                              +------------------------------+
```

Macro library name	Macros defined
_255DUA28:[SHRLIB]UETP.MLB;1	10
_255DUA28:[SYS.OBJ]LIB.MLB;1	1
_255DUA28:[SYSLIB]STARLET.MLB;2	31
TOTALS (all libraries)	42

801 GETS were required to define 42 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:SATSSS56/OBJ=OBJ$:SATSSS56 MSRC$:SATSSS56/UPDATE=(ENH$:SATSSS56)+EXECML$/LIB+SHRLIB$:UETP/LIB